tudinal section in fig. 13. The bearing carriage A, which is split horizontally but rigidly bolted together, can be moved slightly in a longitudinal direction carrying the turbine shaft with it. This movement is obtained as follows: steel rods B, fitted with collars c bearing on the bridge, are screwed into the carriage. The other ends of these rods are brought through the turbine casing and are connected together by a suitable gearing operated by a handwheel D and worm. This rotates both rods simultaneously by the same amount. By this rotation of the rods the bearing carriage can be moved through a short travel longitudinally in either direction as may be desired. The extent of the possible movement in either direction is limited by liners.

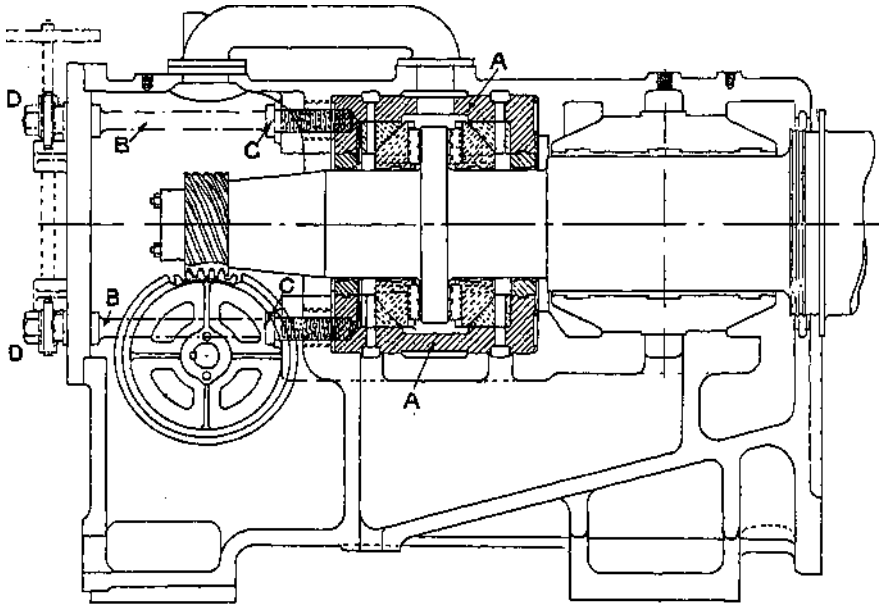

Fig. 13.—Parsons Steam Turbines. Longitudinal Section through Adjustable Pivoted Thrust-bearing

It cannot be assumed that this method entirely overcomes the blade clearance difficulty, for wherever non-lubricated running clearances are required there will be danger of touching, and consequent damage. At the same time, experience has proved conclusively that the end-tightened system has considerably reduced the risk and increased the reliability and economy of this type of turbine.

Method of Blade-fixing now Used:—Originally, and for many years, the Parsons blading was inserted alternately with distance pieces known as caulking pieces. These were made just to fit

between the blade and blade-groove wall. The final operation was vertical caulking. Figs. 14 and 15 show views of built-up " blade units " of present-day Parsons reaction blading. These are now held in position in the shaft or cylinder by means of circumferentially driven serrated locking pieces. The locking pieces are driven up individually one against the other, each piece being swelled up so as to